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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/689,289	10/20/2003	James Edward Johnson	133476	3158

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EXAMINER	
KIM, TAE JUN	
ART UNIT	**PAPER NUMBER**
3746	

DATE MAILED: 07/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/689,289	JOHNSON, JAMES EDWARD
	Examiner	Art Unit
	Ted Kim	3746

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 02 June 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-68 is/are pending in the application.

4a) Of the above claim(s) 2,6,9,13,23-40,42,46,49,53,56,60,62 and 66 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1,3-5,7,8,10-12,14-22,41,43-45,47,48,50-52,54,55,57-59,61,63-65,67 and 68 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 10/20/2003.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of species I in the reply filed on 6/2/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

2. Claims 2, 6, 9, 13, 23-40, 42, 46, 49, 53, 56, 60, 62, 66 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 6/2/2005.. Applicant indicated that claims 6, 9, 13, 42, 66 read on Species I but they read on Species III. Applicant also appears to have inadvertently omitted claim 41 with the elected group of Species I, as similar claim 61 was elected.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson

(5,404,713) in view of any of Tindell (5,447,283), Creasey et al (2,956,759), Bullock (3,302,657), and Kerry et al (2,940,692) and optionally in view of any of EP 567277, Krebs et al (3,673,802) and Gruner (4,159,624). Johnson et al teach an aircraft propulsion system comprising: a gas turbine engine comprising; a fan section 32, at least one row of FLADE fan blades 5 disposed radially outwardly of and drivingly connected to the fan section, the row of FLADE fan blades radially extending across a FLADE duct 3 circumscribing the fan section, an engine inlet including a fan inlet to the fan section and an annular FLADE inlet to the FLADE duct 3; wherein the fan section includes axially spaced apart first 32 and second 34 counter-rotatable fans and the FLADE fan blades 5, are drivingly connected to one of the first and second counter-rotatable fans; further comprising a row of variable first FLADE vanes disposed axially forwardly of the row of FLADE fan blades; further comprising the row of FLADE fan blades disposed between an axially forward row of variable first FLADE vanes and an axially aft row of second FLADE vanes; wherein the fan section includes axially spaced apart first and second counter-rotatable fans and the FLADE fan blades are drivingly connected to one of the first and second counter-rotatable fans; further comprising: a core engine 10, 18 located downstream and axially aft of the fan, a fan bypass duct located downstream and axially aft of the fan and circumscribing the core engine, and the FLADE duct circumscribing the fan bypass duct 78; wherein the fan section includes axially spaced apart first 32 and second 34 counter-rotatable fans and the FLADE fan blades are drivingly connected to one of the first and second counter-rotatable fans; further

comprising: the core engine having in serial flow relationship a row of core driven fan stator vanes 86, a core driven fan with at least one row of core driven fan blades, a high pressure compressor 20, a combustor, and a high pressure turbine 24 drivingly connected to the core driven fan 38, the first and second counter-rotatable fans are radially disposed across an annular first fan duct, first and second low pressure turbines drivingly connected to the first and second counter-rotatable fans, the core driven fan is radially disposed across an annular second fan duct, a vane shroud dividing the core driven fan stator vanes into radially inner and outer vane hub and tip sections, a fan shroud dividing the core driven fan blades into radially inner and outer blade hub and tip sections, a first bypass inlet 46, 48 to the fan bypass duct 78 is disposed axially between the second counter-rotatable fan and the annular core engine inlet to the core engine, a fan tip duct across the vane tip sections of the core driven fan stator vanes and across the blade tip sections of the core driven fan blades extending to a second bypass inlet to the fan bypass duct, and a first varying means for independently varying a flow area of the vane tip section; a second varying means for independently varying a flow area of the vane hub section; wherein the first and second varying means include independently varying vane tip sections and independently varying vane hub sections respectively; further comprising a front variable area bypass injector door in the first bypass inlet; the row of FLADE fan blades disposed radially outwardly of and drivingly connected to the second counter-rotatable fan, the high pressure turbine having a row of high pressure turbine nozzle stator vanes axially located between the combustor and a row of high pressure turbine

blades of the high pressure turbine, the row of high pressure turbine blades 24 being counter-rotatable (col. 8, lines 9+) to the first low pressure turbine 28, and the row of high pressure turbine nozzle stator vanes, the row of high pressure turbine blades, the first row of low pressure turbine blades; the high pressure turbine having a row of high pressure turbine nozzle stator vanes 110 axially located between the combustor and a row of high pressure turbine blades of the high pressure turbine, the row of high pressure turbine blades being counter-rotatable to the first low pressure turbine, a row of fixed stator vanes 66 between the row of high pressure turbine blades and the first low pressure turbine; a variable throat area engine nozzle (col. 10, lines 1+) downstream and axially aft of the core engine, cooling apertures in the centerbody 72 and in a wall 222 of the engine nozzle in fluid communication with the FLADE duct. Johnson et al do not teach a fixed geometry inlet duct in direct flow communication with the engine inlet; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet. Tindell teach a fixed geometry inlet duct 2 in direct flow communication with the engine 8 inlet. Creasy et al teach a fixed geometry inlet duct 130 in direct flow communication with the engine inlet 155; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet

where the engine is a turbojet engine (col. 1, lines 26+). Bullock teach a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet; further comprising the fixed geometry inlet duct having a two-dimensional (rectangular, col. 2, lines 30+) convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet 12 where the engine is a gas turbine engine (col. 3, lines 7+). Kerry et al teach a fixed geometry inlet duct 37 in direct flow communication with the engine inlet. It would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a well known type of inlet for the gas turbine engine of Johnson et al. Johnson et al do not teach the afterburner. EP '277 teaches it is old and well known in the art to employ an afterburner (col. 5, lines 54+). It would have been obvious to employ an afterburner to augment the thrust. Johnson et al teach various aspects of the claimed invention but do not teach two low pressure turbines stages. Krebs et al teach a turbine with a high pressure turbine stage 36 and low pressure turbine stages 38 with low pressure turbines 76 is old and well known in the art. It would have been obvious to one of ordinary skill in the art to add an additional low pressure turbine stage as taught by Krebs et al, in order to facilitate more complete turbine expansion. Gruner teaches a high pressure turbine 58 and counterrotating low pressure turbines 49 and 59. It would have been obvious to one of ordinary skill in the art to employ the low pressure counterrotating turbine arrangement, as taught by Gruner, to employ a compact arrangement.

5. Claims 1, 3-5, 7, 8, 10-12, 14-22, 41, 43-45, 47, 48, 50-52, 54, 55, 57-59, 61, 63-65, 67, 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 567277 in view of any of Tindell (5,447,283), Creasey et al (2,956,759), Bullock (3,302,657), and Kerry et al (2,940,692) and optionally in view of any of Johnson (5,404,713) Krebs et al (3,673,802) and Gruner (4,159,624). EP '277 teaches an aircraft propulsion system comprising: a gas turbine engine comprising; a fan section 11, at least one row of FLADE fan blades 11 disposed radially outwardly of and drivingly connected to the fan section 11, the row of FLADE fan blades radially extending across a FLADE duct 34 circumscribing the fan section 11, an engine inlet including a fan inlet to the fan section and an annular FLADE inlet to the FLADE duct; further comprising a row of variable first FLADE vanes 15 disposed axially forwardly of the row of FLADE fan blades; further comprising the row of FLADE fan blades disposed between an axially forward row of variable first FLADE vanes and an axially aft row of second FLADE vanes; wherein the fan section includes axially spaced apart first 13 and second rotatable fans 11 and the FLADE fan blades 11 are drivingly connected to one of the first and second rotatable fans 11; further comprising: a core engine located downstream and axially aft of the fan 13, a fan bypass duct 16, 32 located downstream and axially aft of the fan and circumscribing the core engine, and the FLADE duct circumscribing the fan bypass duct; wherein the fan section includes axially spaced apart first and second rotatable fans and the FLADE fan blades are drivingly connected to one of the first and second rotatable fans; further comprising: the core engine having in serial flow relationship a row of core

driven fan stator vanes, a core driven fan with at least one row of core driven fan blades, a high pressure compressor (unlabeled), a combustor, and a high pressure turbine (unlabeled) drivingly connected to the core driven fan, the first and second rotatable fans are radially disposed across an annular first fan duct, first and second low pressure turbines (unlabeled) drivingly connected to the first and second rotatable fans, the core driven fan is radially disposed across an annular second fan duct, a vane shroud dividing the core driven fan stator vanes into radially inner and outer vane hub and tip sections, a fan shroud dividing the core driven fan blades into radially inner and outer blade hub and tip sections, a first bypass inlet to the fan bypass duct is disposed axially between the second rotatable fan and the annular core engine inlet to the core engine, a fan tip duct across the vane tip sections of the core driven fan stator vanes and across the blade tip sections of the core driven fan blades extending to a second bypass inlet to the fan bypass duct, and a first varying means for independently varying a flow area of the vane tip section; a second varying means for independently varying a flow area of the vane hub section; wherein the first and second varying means include independently varying vane tip sections and independently varying vane hub sections respectively; further comprising a front variable area bypass injector door in the first bypass inlet; the row of FLADE fan blades disposed radially outwardly of and drivingly connected to the second rotatable fan, the high pressure turbine having a row of high pressure turbine nozzle stator vanes axially located between the combustor and a row of high pressure turbine blades of the high pressure turbine, the row of high pressure turbine blades being rotatable to the first low

pressure turbine, a row of variable low pressure stator vanes between first and second rows of low pressure turbine blades of the first and second low pressure turbines respectively, and the row of high pressure turbine nozzle stator vanes, the row of high pressure turbine blades, the first row of low pressure turbine blades, the row of variable low pressure stator vanes, and the second row of low pressure turbine blades being in serial axial and downstream relationship; the high pressure turbine having a row of high pressure turbine nozzle stator vanes axially located between the combustor and a row of high pressure turbine blades of the high pressure turbine, the row of high pressure turbine blades being rotatable to the first low pressure turbine, a row of fixed stator vanes between the row of high pressure turbine blades and the first low pressure turbine, no vanes between the first and second rows of low pressure turbine blades of the first and second low pressure turbines respectively, and the row of high pressure turbine nozzle stator vanes, the row of high pressure turbine blades, the row of fixed stator vanes, the first row of low pressure turbine blades, and the second row of low pressure turbine blades being in serial axial and downstream relationship. EP '277 do not teach a fixed geometry inlet duct in direct flow communication with the engine inlet; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet. Tindell teach a fixed geometry inlet duct 2 in direct flow communication with the engine 8 inlet. Creasy et al teach a fixed geometry inlet duct

130 in direct flow communication with the engine inlet 155; further comprising the fixed geometry inlet duct having a two-dimensional convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet where the engine is a turbojet engine (col. 1, lines 26+). Bullock teach a fixed geometry inlet duct 2 in direct flow communication with the engine 12 inlet; further comprising the fixed geometry inlet duct having a two-dimensional (rectangular, col. 2, lines 30+) convergent/divergent inlet duct passage with convergent and divergent sections, and a throat therebetween and a transition section between the two-dimensional convergent/divergent inlet duct passage and the engine inlet 12 where the engine is a gas turbine engine (col. 3, lines 7+). Kerry et al teach a fixed geometry inlet duct 37 in direct flow communication with the engine inlet. It would have been obvious to one of ordinary skill in the art to employ a fixed geometry inlet duct with the configuration above, in order to provide a well known type of inlet for the gas turbine engine. EP '277 teach the flade engine but does not specifically mention the counter-rotating fans or turbines. However, Johnson et al teach that it is old and well known in the art to employ counter-rotating fans or turbines in the claimed shaft arrangement, in order to facilitate a more compact arrangement. The variable stator blades between the low pressure turbine stages or the elimination of thereof is also well known depending on whether the turbines are counter-rotating or not. It would have been obvious to one of ordinary skill in the art to employ counter-rotating arrangements, in order to facilitate a compact assembly. It

would have been obvious to one of ordinary skill in the art to employ variable stator blades or eliminate them, as being well known in the turbine art as well known expedients for turbine construction. EP '277 does not teach second variable FLADE blades. Johnson et al further first and second variable FLADE blades for controlling the FLADE airflow. EP '277 does not teach the cooled nozzle centerbody. Johnson et al teach; a variable throat area engine nozzle (col. 10, lines 1+) downstream and axially aft of the core engine, cooling apertures in the centerbody 72 and in a wall 222 of the engine nozzle in fluid communication with the FLADE duct. It would have been obvious to one of ordinary skill in the art to cool the centerbody and nozzle in order to reduce infrared emissions and/or prolong its life. Krebs et al teach a turbine with a high pressure turbine stage 36 and low pressure turbine stages 38 with low pressure turbines 76 is old and well known in the art. It would have been obvious to one of ordinary skill in the art to add an additional low pressure turbine stage as taught by Krebs et al, in order to facilitate more complete turbine expansion. Gruner teaches a high pressure turbine 58 and counterrotating low pressure turbines 49 and 59. It would have been obvious to one of ordinary skill in the art to employ the low pressure counterrotating turbine arrangement, as taught by Gruner, to employ a compact arrangement.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ted Kim whose telephone number is 571-272-4829. The

Examiner can be reached on regular business hours before 5:00 pm, Monday to Thursday and every other Friday.

The fax numbers for the organization where this application is assigned are 703-872-9306 for Regular faxes and 703-872-9306 for After Final faxes.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe, can be reached at 571-272-4444.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist of Technology Center 3700, whose telephone number is 703-308-0861. General inquiries can also be directed to the Patents Assistance Center whose telephone number is 800-786-9199. Furthermore, a variety of online resources are available at http://www.uspto.gov/main/patents.htm

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